

### **REMARKS**

This Amendment is prepared in response to the first Office action mailed on 23 March 2006 (Paper No. 20060316). Upon entry of this amendment, claims 1-3, 5-13, 15, 18 and 21-30 will be pending. Applicant has canceled claims 4, 14, 16, 17, 19 and 20 without prejudice or disclaimer as to their subject matter by this amendment and has amended claims 1, 5, 10-13, 15, 18 and 21 by this amendment.

#### **Objection to Claim 10 and 11**

On Page 2 of Paper No. 20060316, the Examiner objected to claims 10 and 11 because of an informality in claim 10. Applicant has amended claim 10 by this amendment to overcome this claim objection.

#### **Certified English Translations of Applied Prior Art**

In Paper No. 20060316, the Examiner relied on Korean references to Hwang (KR 1020020027801) and Kim (KR1020010039120) to reject Applicant's claims without supplying an English translation of these references. Applicant has had both of these references translated into English and is now supplying the Patent Office certified English translations of Hwang and Kim.

#### **Rejection of Claims 18 and 20 under 35 U.S.C. §102(b)**

In Paper No. 20060316, the Examiner rejected claims 18 and 20 under 35 U.S.C.

§102(b) as being anticipated by Hwang *et al.* (KR1020020027801). Applicant has amended claim 18 and has canceled claim 20 by this amendment making this rejection moot.

**Rejection of Claims 1-12, 14-17 and 27-30 under 35 U.S.C. §103(a)**

In Paper No. 20060316, the Examiner rejected claims 1-12, 14-17 and 27-30 under 35 U.S.C. §103(a) as being unpatentable over Hwang *et al.* KR'801 in view of Kim *et al.* (KR1020010039120). Applicant has the following comments.

**Regarding Applicant's claim 5**, Applicant had originally claimed, "wherein the plurality of thermoelectric semiconductor devices are arranged on a surface of the back cover adjacent to the chassis base such that the heat emitting surfaces of the thermoelectric semiconductor devices contact the back cover." On Page 4 of Paper No. 20060316, the Examiner addressed this limitation by saying, "Hwang discloses the thermoelectric semiconductor devices (27) are arranged on a surface of the back cover (28) adjacent to the chassis base (22) such that the heat emitting surfaces (27b) of the thermoelectric semiconductor devices contact the back cover (28)." Applicant disagrees.

Applicant submits that FIG. 2 of Hwang along with the accompanying portion of the specification of Hwang teaches the thermoelectric element 27 being in a hole in cover 28. Further, FIG. 2 of Hwang and the accompanying description thereof do not teach that the thermoelectric element 27 ever contacts the back cover 28. Further, Hwang never teaches

or suggests the thermoelectric element 27 being on a surface of the back cover 28. Neither does the Kim reference. Applicant submits that this distinction between Applicant's claim 5 and Hwang is very significant as Applicant teaches that heat released from the thermoelectric semiconductor devices goes through the back cover before being expelled to the outside of the display. In contradistinction, Hwang teaches that the heat released from thermoelectric element 27 is released directly to an exterior of the display. Because Hwang does not teach the limitation of Applicant's claim 5, the rejection of Applicant's claim 5 is without merit.

**Regarding Applicant's claim 6,** Applicant claims, "wherein the plurality of thermoelectric semiconductor devices are fixed to the exterior surface of the back cover such that the heat absorbing surfaces of the thermoelectric semiconductor devices contact the back cover." On Page 4 of Paper No. 20060316, the Examiner addresses this limitation by saying, "Hwang discloses the thermoelectric semiconductor devices (figure 3, 37) are fixed to the exterior surface of the back cover (38) adjacent to the chassis base (32) such that the heat absorbing surfaces (37a) of the thermoelectric semiconductor devices contact the back cover (28)." Applicant disagrees.

Applicant submits that FIG. 3 of Hwang and reference numeral 37 of Hwang pertain to a heat pipe, not a thermoelectric semiconductor device. A heat pipe does not contain any semiconductors and operates on a principle entirely unlike a thermoelectric semiconductor

device. Further, heat pipe 37 of Hwang is located in an opening in the cover 38 and does not ever contact the cover 38, not to mention being on an exterior surface of the cover. Therefore, Applicant submits that Hwang can not possibly teach Applicant's claim 6.

Applicant has amended claim 5 by this amendment to clarify claim 5. Applicant has amended claim 1 by this amendment to make it generic to both depending claims 5 and 6.

**Regarding Applicant's claim 12**, Applicant claims, "further comprising a heat sink arranged on each heat emitting surface of a corresponding thermoelectric semiconductor device." On Page 5 of Paper No. 20060316, the Examiner addresses this limitation by saying, "Hwang discloses a heat sink (26) being arranged on corresponding heat absorbing surfaces (27b) of thermoelectric semiconductor devices." Applicant disagrees.

To begin with, Applicant is not claiming in claim 12 that the heat sink is arranged on the heat *absorbing* surface of the thermoelectric element but instead on the *heat emitting* surface. See Applicant's FIG. 11 for example. Applicant submits that the Examiner failed to correctly recite Applicant's claim 12 in the rejection of claim 12 on Page 5 of Paper No. 20060316 and that this incorrect recitation resulted in an incorrect examination of claim 12. Applicant submits that neither Hwang nor Kim ever teach or suggest a heat sink attached to a heat emitting surface of a thermoelectric element. Therefore, the rejection of claim 12 is entirely without merit.

Applicant has amended claim 12 by this amendment to place it in independent form by including the language of depending claim 1 (prior to amendment of claim 1).

**Regarding Applicant's claim 27**, Applicant claims, "a plurality of thermoelectric semiconductor devices arranged between the back cover and the chassis base ...". On Page 7 of Paper No. 20060316, the Examiner states that this is taught by page 3, lines 17-21 of Hwang. Applicant disagrees.

Applicant has translated this section of Hwang along with the entire reference to Hwang and can not find any teaching in Hwang of a thermoelectric element arranged between the back cover and the chassis base. Instead, this section of Hwang teaches that the thermoelectric element 27 is arranged on a heat sink 26. Specifically, the heat absorbing part of thermoelectric element 27 is provided on a rear surface of extended part 26a of heat sink 26 and the heat dissipating part of thermoelectric element 27 is exposed to an exterior of the plasma display device through a hole in the cover. See the paragraph that begins at the bottom of Page 8 and ends at the top of Page 9 of Applicant's submitted certified English translation of Hwang. Further, FIG. 2 of Hwang clearly shows the thermoelectric element 27 not in contact with the back cover 28 but instead in contact with the heat sink 26. Because there is no teaching in Hwang of a thermoelectric element located between the back cover and the chassis base, the rejection of Applicant's claim 27 is without merit. As a result, claim 27 remains unamended.

**Regarding Applicant's claim 28**, Applicant claims, "said plurality of thermoelectric semiconductor devices being in contact with the back cover". On Page 8 of Paper No. 20060316, the Examiner states, "Hwang discloses the thermoelectric semiconductor device (figure 3, 37) being in contact with the back cover (38)." Applicant disagrees.

To begin with, FIG. 3 and reference numeral 37 of Hwang pertains to a heat pipe, not a thermoelectric semiconductor device. Further, Hwang never teaches a thermoelectric element in contact with a back cover. Although FIG. 2 of Hwang shows a thermoelectric element 27 mounted on a heat sink 26 and located within an opening of the back cover 28, Applicant submits that there is no teaching in Hwang that the thermoelectric element 27 contacts the back cover 28. This is very significant as Applicant teaches that heat released from the thermoelectric semiconductor devices goes through the back cover before being expelled to the outside of the display. See Applicant's FIG. 13 for example. In contradistinction, Hwang teaches that the heat released from thermoelectric element 27 is released directly to an exterior of the display without ever having to go through the back cover 28. Because Hwang does not teach the limitation of Applicant's claim 28, the rejection of Applicant's claim 28 is without merit.

On Page 8 of Paper No. 20060316, the Examiner deemed claims 13 and 19 as allowable. As a result, Applicant has amended claims 13 and 19 by this amendment to incorporate the subject matter of depending claims 1 and 18 respectively into claims 13 and

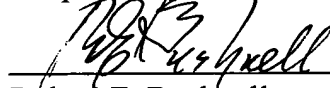
19 to place claims 13 and 19 in instant condition for allowance. Applicant has also amended claim 15 so it now depends from claim 1 by this amendment.

A fee of \$200 is incurred for the addition of one more independent claim in excess of three.

In view of the above, it is submitted that all of the claims now present in the application are patentable over the cited references, taken either alone or combination and accordingly should now be in a conditions suitable for allowance.

No other issues remaining, reconsideration and favorable action upon all of the claims now present in the application is respectfully requested.

Respectfully submitted,

  
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